CpDNA-based species identification and phylogeography: application to a complex of African tropical tree species

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Résumé : Despite their importance as a hotspot of biodiversity, the history of the African tropical lowland rainforests is poorly known. In particular the respective influence of past climatic factors, environmental heterogeneity and physical barriers on the demographic history of plant species still have to be studied. Molecular approaches that characterise the distribution of genetic diversity in plant species and try to interpret it in the light of past historical events are promising in this respect. We examine here the distribution of genetic diversity at maternally-inherited markers (chloroplast DNA) of two tropical timber tree species, *Erythrophleum ivorense* and *Erythrophleum suaveolens* (Leguminosae-Caesalpinioideae), in their Lower Guinea distribution (essentially Gabon and Cameroon). As for many tropical sister-taxa, species identification is almost impossible in the field when flowers or fruits are not available. Using a blind-sampling approach and confronting molecular and morphological markers it was possible to attribute sampled individuals to one or the other species. The two species appear to have different ecological requirements and are rarely found in sympatry. A phylogeographic signal was found for *E. suaveolens* and, for both species, higher levels of diversity were observed in the South than in the North of the Lower Guinea domain. A recent period of forest perturbation, potentially human-induced, has probably favoured the expansion of these two light-demanding species. An observed genetic signal of demographic decline and the poor recruitment of the species can be interpreted as consequences of the natural succession of the forest formations.